

SAMHSA ADVISORY

Substance Abuse and Mental Health
Services Administration

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IDENTIFICATION AND MANAGEMENT OF MENTAL HEALTH SYMPTOMS AND CONDITIONS ASSOCIATED WITH LONG COVID

The coronavirus disease of 2019 (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus (severe acute respiratory syndrome coronavirus 2) that has affected billions of people globally. By May 2023, countries across the world had reported over 767 million COVID-19 cases;² in the United States, over 104 million cases and 1.1 million deaths had occurred.³ Some people who get COVID-19 experience long-term effects from the virus and health problems that can last or emerge weeks, months, or even years after infection.⁴ These post-COVID conditions (PCC) are most commonly known as Long COVID. PCC that are primarily a result of the viral infection are also referred to as post-acute sequela of SARS CoV-2 infection (PASC).⁴

Estimated Incidence of Long COVID Among Different Case Types¹

Vaccinated:	10–12 percent
Non-hospitalized:	10–30 percent
Hospitalized:	50–70 percent

From the start of the COVID-19 Public Health Emergency (PHE), primary care providers have been on the front line of care for individuals experiencing COVID-19 and have played a critical role in increasing our understanding of the disease. While the number of new cases continues to decrease, at least 10 percent of individuals may experience one or more symptoms of Long COVID.¹ Consequently, primary care providers can benefit from greater familiarity with Long COVID, and in particular, with its mental health conditions and related symptoms. These symptoms can include depression, anxiety, difficulty thinking or concentrating (sometimes referred to as “brain fog”), headache, sleep problems,⁴ and psychosis.⁵ In addition to these symptoms and conditions, pandemic-related stress and social isolation can increase the likelihood of alcohol consumption, substance use, and related deaths.^{6,7}

This advisory discusses the epidemiology of mental health symptoms and conditions of Long COVID and provides evidence-based resources for their treatment. While Long COVID also affects children and adolescents, most research to date has focused on adults. The guidance in this document reflects this existing knowledge base.

Key Messages

- The mental health conditions associated with Long COVID include, but are not limited to, depression, anxiety, psychosis, obsessive compulsive disorder, and posttraumatic stress disorder; other symptoms of Long COVID include cognitive impairment, sleep disturbances, and fatigue.
- Social determinants of health can contribute to the negative impact of COVID-19 and Long COVID for certain groups, including racial and ethnic minority populations, individuals with physical and intellectual disabilities, and individuals who are LGBTQI+.
- Best practices for assessment and treatment of Long COVID continue to emerge. Primary care providers can use evidence-based approaches developed to treat conditions with similar symptoms and provide referrals and access to resources specific to Long COVID.
- It may be difficult to determine if a person's mental health challenges are due to Long COVID, broader pandemic challenges, or a combination of the two, but treating symptoms is vital to recovery.

Definitions

- **Long COVID:** Signs, symptoms, and conditions that persist or develop after initial COVID-19 infection that:
 - Exist four or more weeks after the initial period of infection
 - May affect multiple systems in the body
 - May show a pattern of relapse and remission and progression or worsening over time, with a possibility that severe and even life-threatening events may occur months after infection
- Long COVID is not one condition. It represents many potentially overlapping entities, likely with different biological causes and sets of risk factors and outcomes.⁸ Other terms people use to refer to the condition include post-COVID syndrome, post-acute COVID-19, chronic COVID-19, long-term effects of COVID, and long-haul COVID.
- **Post-COVID Conditions (PCC):** A scientific term that is equivalent to Long COVID.
- **Post-acute sequelae of SARS CoV-2 infection (PASC):** A scientific term that refers to the primary effects of SARS-CoV-2 infection. The difference between PCC and PASC is that PCC includes the primary and secondary consequences of SARS-CoV-2 infection and PASC only includes the primary effects. All individuals with PCC will have had PASC, but not all individuals with PASC will develop PCC.
- **Brain Fog:** Refers to cognitive impairment. While not a medical diagnosis, the term “brain fog” has entered the vernacular to refer to a pattern of cognitive dysfunction in processing speed, memory, attention, or executive dysfunction,⁹ and is one of the most frequently reported symptoms of Long COVID.⁴
- **Social Determinants of Health (SDOH):** Conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. The Social Determinants of Health cover five domains: economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context.
- **Health Inequities:** Differences in health status or in the distribution of health care and other resources between different population groups or geographic areas, arising from the social conditions in which people are born, grow, live, work, and age.¹⁰

Defining Long COVID

While our understanding of Long COVID continues to evolve as more studies emerge, one interim working definition from the Department of Health and Human Services (HHS) is that it consists of signs, symptoms, or conditions thought to be related to a SARS-CoV-2 infection after clinical examination that persist or develop four weeks or more after an initial episode of COVID-19 and may affect multiple systems in the body.^{8,a} Physical symptoms may include fatigue, difficulty breathing, coughing, chest pain, dizziness, stomach pain, and joint pain, among others.⁴ Long COVID can also have a significant impact on people's mental health and limit their daily functioning, which is the focus of this Advisory.

There is no single test for defining or diagnosing Long COVID, and we still do not understand the underlying pathophysiology. Long COVID can occur among individuals who had COVID-19 but never received an official COVID-19 diagnosis or were asymptomatic, leading people to associate their health issues with something other than a prior SARS-CoV-2 infection.¹¹

Long COVID and Children

Children and adolescents under 18 years of age also experience Long COVID. Reported prevalence varies widely, from approximately 4 percent to 66 percent.¹⁵ The most frequently reported mental health symptoms in children are changes in mood, fatigue, sleep disorders, cognitive symptoms (e.g., less concentration, learning difficulties, confusion, and memory loss), and headaches.^{16, 17} Furthermore, many children may be grieving the loss of a loved one.¹⁸ With no existing treatments specifically for Long COVID, providers should use established methods to manage symptoms.¹ The field needs additional research to fully understand the impact of and treatment for Long COVID among children. [Resources](#) are available to support children and refer them to additional services.

If patients encounter a primary care provider who is less familiar with the full range of Long COVID symptoms, they may be misdiagnosed as a result.¹¹⁻¹³ If a clinician communicates, even unintentionally, that they perceive symptoms to be exaggerated or psychosomatic, patients may feel a sense of shame and embarrassment and feel discouraged from seeking ongoing medical treatment. This is important to note, since health inequities may increase the risk of Long COVID in racial or ethnic minority groups, those with disabilities, and sexual and gender minority populations.^{4, 14}

Impact of the COVID-19 Pandemic on Mental Health

Beyond the impacts of SARS-CoV-2 and Long COVID on individuals' physical and mental health, the pandemic has had an impact on population-wide well-being. Initial mitigation efforts to reduce the spread of COVID-19 included social distancing recommendations, which contributed to school, employment, and social disruption. [Social isolation](#)¹⁹ is associated with increased symptoms of depression, anxiety, and loneliness, especially among older adults.²⁰ Unemployment or underemployment increased the risks of depression and anxiety, with exposure to insecure employment being disproportionately concentrated in Hispanic or Latino and Black populations, women, young adults aged 18 to 29 years, and those without a college degree.²¹

The SAMHSA publication [Overview of the Impacts of Long COVID on Behavioral Health](#) summarizes the behavioral health implications of Long COVID.

^a The definition according to WHO is "the continuation or development of new symptoms 3 months after the initial SARS-CoV-2 infection, with these symptoms lasting for at least 2 months with no other explanation."

Many people initiated or increased use of drugs and alcohol as a means of coping with stress during the pandemic,²² when there was also an increase in substance use disorders²³ and deaths from opioid use.²⁴ School closures increased caregiving burdens, especially for mothers and parents of young children, exacerbating their overall stress and mental health challenges.²⁵ Furthermore, more than one million people died from COVID-19 in the United States. Survivor's guilt and ongoing bereavement contribute to mental health problems.^{26, 27}

Mental Health Symptoms and Conditions Associated With Long COVID^b

The exact mechanisms of how COVID-19 impacts mental health over the long-term are still being explored.³⁰ People who had a history of depression, anxiety, stress, and loneliness before a COVID-19 diagnosis have a higher risk for Long COVID and greater severity of COVID-19 illness, independent of other risk factors.³¹ People without prior mental health conditions are at higher risk for developing an initial onset of mental illness following COVID-19, compared to people who were not infected.³² These observations point to the complex relationship between COVID-19 and mental health conditions. In adults, mental health and related symptoms and conditions associated with Long COVID include:^c

- **Fatigue:** Reported by 32 percent of COVID-19 survivors 12 or more weeks following diagnosis³³
- **Cognitive impairment, including brain fog:** Reported by 22 percent of COVID-19 survivors 12 or more weeks following diagnosis³³
 - Increased risk of cognitive impairment persisted at the end of the two-year follow-up period for individuals who had COVID-19 compared to individuals with another respiratory infection⁵
- **Anxiety symptoms:** Reported in 35 percent of adults with Long COVID at 6-month follow-up after the onset of COVID-19 symptoms³⁴
- **Depression symptoms:** Reported in 41 percent of adults with Long COVID at 6-month follow up after the onset of COVID-19 symptoms³⁴
- **Obsessive-compulsive disorder symptoms (OCD):** Reported by approximately 20 percent of adults 1 month after hospital treatment for COVID-19 infection,³⁵ compared to a lifetime prevalence of OCD in approximately 2 percent of adults in the United States³⁶
- **Sleep disorders:** Reported by 30 percent of adults with Long COVID^{37, 38}
- **Posttraumatic stress disorder (PTSD):** Diagnosis reported in approximately 14 percent of adults with Long COVID three or more months after COVID-19 infection³⁹
- **Psychotic disorder:** Evidence of a greater risk (based on a 1.27 hazard ratio) for a psychotic disorder at 6 months following a COVID-19 diagnosis, compared to people with another respiratory tract infection⁵
 - While risk of anxiety and mood disorders returned to baseline one to two months after a COVID-19 diagnosis, risk of psychotic disorders remained elevated two years after follow-up, suggesting a different pathogenesis for this condition⁵
- **Initial onset of substance use disorder (SUD):** Among people who were not hospitalized, 6 months after a COVID-19 diagnosis, individuals had a higher probability of being diagnosed with their first substance use disorder (based on a 1.21 hazard ratio), compared to people recovering from influenza⁴⁰

^b In this Advisory, we use the term “symptom” to refer to a deviation from normal functioning that is considered indicative of physical or mental pathology.²⁸ American Psychological Association. (n.d.). *APA dictionary of psychology: Symptom*. <https://dictionary.apa.org/symptom>. We use “condition” to mean a health problem with certain characteristics or symptoms.²⁹ National Institutes of Health. (n.d.). *Condition*. National Cancer Institute. <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/condition>

^c These data were current at the time of this Advisory's publication.

Increased Risk for Mental Health Conditions Associated With Long COVID

Rates of mental health conditions are higher in the following Long COVID populations:

- People hospitalized for COVID-19⁴¹
- People who had more severe COVID-19 illness⁴¹
- People who had a longer duration of COVID-19 symptoms⁴¹
- People with preexisting and comorbid psychiatric disorders⁴²
- Black, Hispanic or Latino, and American Indian/Alaska Native people^{14, 43}
- Women⁴⁴

Inequities in Long COVID Risk and Access to Health Care

The COVID-19 pandemic exacerbated existing inequities in chronic disease risk and access to health care, disproportionately impacting racial and ethnic minority populations. Specifically, Hispanic or Latino populations and American Indian/Alaska Natives (AI/AN) in the United States have 1.5 to 1.6 times the rate of reported COVID-19 compared to White individuals.⁴⁸

Hispanic, Black,⁴⁸ and AI/AN⁴⁹ populations have higher rates of hospitalization for COVID-19, compared to White Americans. Individuals who are AI/AN are particularly susceptible to high levels of disease transmission because of the structural, social, and health inequities they have experienced over generations⁵⁰ and have 2.5 times the rate of COVID-19 hospitalization and 2.0 times the rate of mortality compared to White populations.⁴⁹ More research is needed to understand how Long COVID uniquely impacts this population.

Long COVID and the ADA

Long COVID can be a disability under Titles II (state and local government) and III (public accommodations) of the Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act of 1973, and Section 1557 of the Patient Protection and Affordable Care Act, if it substantially limits one or more major life activities.⁴⁵⁻⁴⁷

Additionally, people with physical disabilities experience increased rates of COVID-19 infection, hospitalization, and deaths compared to non-disabled people, especially those with physical disabilities living in residential or long-term care settings.^{51, 52} People with disabilities faced healthcare discrimination during the pandemic⁵² and comprise a disproportionate number of deaths as a result.

LGBTQI+ populations are also more likely than people who do not identify as sexual and gender minorities to contract COVID-19; this may be due to increased exposure and infection risk from work in the service industry, and having higher rates of smoking compared to other populations.⁵³ Furthermore, people who identify as LGBTQI+,⁵⁴ racial and ethnic minority populations,⁵⁵ and people with disabilities⁵² have the additional burden of greater rates of preexisting and comorbid physical and mental health conditions that can increase the risk of severe illness and complications due to COVID-19. In the United States, people who identify as bisexual consistently have a higher rate of Long COVID than the populations that identify as straight, gay, or lesbian.¹⁴ People who identify as transgender have more than twice the rate of Long COVID as cisgender males, and a slightly higher rate than cisgender females.¹⁴

Long COVID and Individuals With Intellectual Disabilities

People with intellectual disabilities are vulnerable to contracting COVID-19 and experiencing its adverse effects as a result of regular contact with one or more home care supports and the high likelihood of living in high-contact housing, like group homes or other congregate settings.⁵⁶ In fact, in the United States, having an intellectual disability was one of the strongest independent risk factors for contracting COVID-19 and related mortality.⁵⁷ In 2020, COVID-19 was the number one cause of death among those with an intellectual disability, compared to the number three cause of death in those without intellectual disabilities.⁵⁸

With their high rate of comorbid conditions, people with intellectual disabilities also potentially have higher risk of getting severe COVID-19, which can increase their Long COVID risks.⁵⁷ It may be more challenging to identify and manage Long COVID in these populations than in those without intellectual disabilities because of their underlying disability. More research is needed to understand the full scope of Long COVID in people with intellectual disabilities.

The likelihood of developing psychiatric and neurological symptoms following COVID-19 is greater among individuals with preexisting medical conditions, those who experience severe COVID-19, and individuals who are hospitalized due to COVID-19.⁴¹ Black populations have higher rates of preexisting conditions⁵⁹ and Black, Hispanic or Latino, and AI/AN populations have higher rates of hospitalization⁴⁹ due to COVID-19 compared to White populations. Therefore, these racial and ethnic minority populations may have disproportionately increased risk of developing Long COVID and associated mental health symptoms. Based on data from February 2023, people with disabilities had an 81 percent greater incidence of Long COVID compared to non-disabled people,¹⁴ increasing the likelihood of people with disabilities experiencing associated mental health symptoms.

Numerous factors contribute to the higher incidence of COVID-19 and potentially Long COVID among different subgroups. These factors include healthcare access and use, occupation, and gaps related to education, income, and wealth.⁸ Inadequate access to safe housing, healthy food, transportation, and health care can increase chronic stress among individuals in racial and ethnic minority groups,²³ people with disabilities,⁶⁰ and people identifying as LGBTQI+.⁵⁴ This contributes to negative impacts on their mental health and poor COVID-19 outcomes.

Social determinants of health (SDOH) that contribute to Long COVID inequities include:

Economic stability

- COVID-19 symptoms reduce employment attendance,⁶¹ and people with Long COVID have a higher likelihood of being unemployed than those without Long COVID.⁶²
- Racial and ethnic minority populations and LGBTQI+ populations were more likely to experience unemployment or reduced work hours during the pandemic.^{63, 64}

The National Research Action Plan on Long COVID

The [National Research Action Plan on Long COVID](#) (NRAP) recognizes the need to coordinate efforts among the public health community, including medical professionals, scientists, researchers, policymakers, and federal and private agencies, to further the response to Long COVID's mental health effects. NRAP focuses on increasing awareness, research, and resources for Long COVID as well as improving patient care and access to mental health services with commitment to health equity.⁸

Healthcare access and quality

- Populations that identify as LGBTQI+,⁵⁴ people with disabilities,⁵⁹ and racial and ethnic minority populations⁶⁰ face stigma and discrimination in healthcare settings that may decrease their likelihood of seeking healthcare services, especially for mental health concerns. This results in delays or lack of appropriate care. Other factors, such as the inability to access vaccination sites, lack of transportation, and poor health messaging, contribute to lower vaccination rates among people with disabilities⁶⁵ and racial and ethnic minority populations.⁶⁶
- Black and Hispanic or Latino populations tend to be uninsured at higher rates, which can prevent them from receiving adequate health care.⁴³
- Racial and ethnic minority populations are more likely to live in medically underserved areas compared to White populations.⁴³
- Ethnic and racial minority populations had higher levels of unmet mental healthcare needs during the pandemic.⁶⁷
- People with disabilities were less able to access routine health care and rehabilitation during the pandemic.⁶⁰
- People with disabilities often rely on direct care workers, who were less able to quarantine and access personal protective equipment (PPE) early in the pandemic.⁵²
- People who identify as LGBTQI+ were more likely to delay or forego care compared to people who identify as cisgender or heterosexual. Experiencing discrimination increased the likelihood that a person identifying as LGBTQI+ would forego care.⁶⁸

Neighborhood and built environment

- Racial or ethnic minority populations are disproportionately more likely to live in high-density areas⁶⁹ that increase exposure⁷⁰ to COVID-19.
- People who live in congregate settings, such as nursing homes, group homes, long-term care settings, and prisons are exposed to COVID-19 more frequently and for longer durations.⁷¹
- People who lack reliable transportation may use public transportation, which can increase exposure to COVID-19 and delay access to care.⁷²
- Racial and ethnic minorities⁷³ and populations that identify as LGBTQI+⁶³ were more likely to work jobs with increased exposure to COVID-19.
- People with disabilities and individuals identifying as LGBTQI+ were more likely to be cut off from community due to social restrictions enacted to mitigate the pandemic.⁵⁴
- Elderly adults who identify as LGBTQI+ were more likely to be single and living alone, less likely to have children, and more likely to be estranged from their family compared to elderly adults who identify as heterosexual and cisgender,⁷⁴ impacting their access to mental and physical supports during the pandemic.

More research is needed to understand the prevalence of Long COVID and its mental health symptoms and conditions among racial and ethnic minorities, people with disabilities, and populations that identify as LGBTQI+. Understanding and addressing SDOH is vital to creating more equitable access to resources and improving Long COVID's negative health impacts among racial and ethnic minorities.

Assessments of and Treatment for Mental Health Symptoms and Conditions Associated with Long COVID

Approximately 90 percent of vaccinated people who get COVID-19 and 70 to 90 percent of unvaccinated people will recover fully from the virus within two to three weeks of the infection; however, about 10 to 30 percent of people experience persistent symptoms four weeks after the initial infection and may require additional assessment and treatment to fully recover.¹

Assessment

To aid in the identification and management of Long COVID, the American Academy of Physical Medicine and Rehabilitation ([AAPM&R](#)) Multi-Disciplinary [PASC Collaborative](#) has created cognitive symptom assessment recommendations for patients who experience symptoms of Long COVID⁷⁵ (see [Appendix A](#)). While primary care providers can assess and treat many of these symptoms, patients may also require care from medical and behavioral health specialists, as well as support from other service systems. Recommendations from AAPM&R suggest a comprehensive evaluation of symptoms, medications taken, and lifestyle, as well as a panel of laboratory tests and history of preexisting conditions.

In addition to evaluating cognitive functioning, assessing depressive disorders, anxiety disorders, psychological stress, PTSD, OCD, and substance use disorders through clinical interviews and standardized screening tools can be helpful for primary care providers diagnosing and treating patients with Long COVID. Therefore, [Appendix B](#) provides examples of associated mental health conditions and available evidence-based interventions. As more is learned about Long COVID, the treatment, recommendations, and resources will continue to evolve.

Treatment Approaches

Long COVID is not a single disorder but a cluster of symptoms and conditions that requires a comprehensive treatment plan.⁷⁶ Using an interdisciplinary approach to treatment can improve a patient's overall health and wellness. Additionally, integrating mental health or substance use treatment into the primary care setting will expand the reach of options to those who need treatment.⁷⁷ Integrating primary care and behavioral health services is also a key priority of the Biden–Harris Administration to increase treatment capacity and access.⁷⁸

One frequent barrier to integrating primary care and behavioral health treatment is funding. The Agency for Healthcare Research and Quality (AHRQ) includes information on [funding resources](#) in its [Guidebook of Professional Practices for Behavioral Health and Primary Care Integration](#).

Different models are available that integrate mental health services into the primary care setting, providing an interdisciplinary approach:

- Supported through the Consolidated Appropriations Act of 2023 ([HR 2617](#)), the [Psychiatric Collaborative Care Model \(CoCM\)](#) adds a psychiatric consultant and behavioral healthcare manager to the primary care provider team to collaboratively plan care with patients whose conditions are not improving.⁷⁹ Regular visits with the behavioral healthcare manager and routine case load reviews with psychiatric consultants are services covered under Medicare⁷⁹ and Medicaid⁸⁰ and potentially under other insurance plans.⁸¹
- AAPM&R is developing clinical guidance to improve quality of care for people with Long COVID and formal training for providers.⁸² More than 40 [Long COVID clinics](#) are participating, and may be a care option for some patients, though their location within academic settings and low capacity are limitations.

Because those with Long COVID may experience the trauma of a life-altering chronic illness, taking a [trauma-informed approach](#) to treatment is important.⁸³ A trauma-informed approach emphasizes safety, trustworthiness, and transparency; may include peer support; focuses on collaboration and mutuality; empowers the individual; and acknowledges cultural, historical, and gender issues.⁸⁴ Individuals experiencing PTSD can benefit from trauma-focused primary care practitioners.^{85, 86} Primary care providers can also consider referring patients to a range of therapeutic interventions, including:

- **Individual and Group Psychotherapy:** Individual psychotherapy may be beneficial for people who have new or relapsed psychiatric conditions related to Long COVID, such as anxiety and depression. Individual psychotherapy may include cognitive behavioral therapy, mindfulness-based cognitive therapy, or other commonly used psychotherapy methods. Pharmacotherapy may or may not be added to the individual psychotherapy as indicated.⁸⁷
Group psychotherapy may be beneficial for those experiencing neuropsychiatric sequelae of Long COVID, because engaging with others with similar experiences can provide validation and learning opportunities. For example, in one description of group psychotherapy among patients with Long COVID, patients shared potential treatment options and found benefits from others for coping with uncertainty and maintaining hope in the face of suffering.⁸⁸ Participants also reported sharing psychological responses related to grief, including grieving for their prior healthy selves, and significant benefits from group psychotherapy in their sense of belonging and acceptance.⁸⁸
- **Peer Support:** Peer support groups, including groups held online, can be beneficial for patients experiencing Long COVID. These groups can play a key role in building connections with others who have had similar experiences and providing reassurance on one's own lived experience. They can also fill gaps in access to professional care, shed light on variations in recovery progress, and boost patients' mental well-being.⁸⁹
- **Physical Medicine and Rehabilitation:** Physical medicine⁹⁰ and rehabilitation⁹¹ may be necessary for individuals to recover from chronic fatigue and anxiety and function as independently as possible.⁹⁰ Physiotherapy, one form of rehabilitation, may improve physical fitness and respiratory function through aerobic training, exercises that strengthen muscles, and breathing techniques. Participation in specialized physical rehabilitation programs can reduce post-COVID-19 fatigue.⁹⁰
Physiatrists are physicians who work in physical medicine and rehabilitation. They take a "whole person" approach by addressing the patient's physical, emotional, and social needs during rehabilitation. Physiatrists are well-positioned to tackle the complex needs of a patient during their recovery from Long COVID by managing neurological symptoms, pulmonary rehabilitation,⁹² and medications.⁹³
- **Occupational Therapy:** Occupational therapy considers the complex relationships between an individual, an activity, and the environment in which that activity takes place. Occupational therapy may be beneficial to improve an individual's ability to function optimally while conducting activities they need and want to complete in their daily life.⁹⁴ A multidisciplinary approach that includes occupational therapy with activity modification, energy conservation, and breathing strategies can improve functional outcomes in patients with fatigue and other related symptoms associated with Long COVID.⁹⁴
- **Neurorehabilitation:** Neurological rehabilitation is a program for improving the well-being of people with neurological challenges, such as neurocognitive disorders, and includes approaches like combined cognitive rehabilitation and cognitive behavioral therapy, metacognitive strategies,

and attention processing training.⁹⁵ These strategies may be used to address Long COVID symptoms like extreme fatigue and cognitive deficits, including poor attention, concentration, and memory.⁹⁶ Some neurorehabilitation strategies can be provided virtually to patients via tele-rehabilitation, increasing the number of patients who can access these treatments.⁹⁵

- **Pharmacotherapy:** Primary care providers may find it useful to combine available therapies with prescription medications, as part of an interdisciplinary approach to treating the symptoms and conditions associated with Long COVID. For example, anxiety and depression may improve with the use of prescription medications, such as [selective serotonin reuptake inhibitors \(SSRIs\)](#). Some patients diagnosed with PTSD or OCD may also experience reduced symptoms with SSRIs or [serotonin-noradrenaline reuptake inhibitors](#) combined with psychotherapy.⁹⁷ Referral to a psychiatrist may also help.
- **Speech/Language Pathologist (SLP):** Some patients with Long COVID experience lasting neurological consequences that impact their language skills due to cognitive communication impairment.⁹⁸ Those patients may benefit from referral to an SLP, a professional who specializes in the screening, evaluation, and rehabilitation of speech, language, voice, fluency, and swallowing disorders.⁹⁹
- **Substance Use Disorder referrals:** A decline in overall psychological well-being due to anxiety or depressive symptoms combined with an increase in substance use was reported by 40 percent of people during the pandemic.¹⁰⁰ Those who experience Long COVID should be evaluated for SUDs and considered for treatment referrals. One resource practitioners can use is [Screening, Brief Intervention, and Referral to Treatment \(SBIRT\)](#) (additional SBIRT resources are located [here](#) and [here](#)).

Tips for Primary Care Providers¹⁰¹

- Listen to the patient's story and validate their experience.
- Make the diagnosis of Long COVID, which does not have to be by exclusion, and exclude alternative diagnoses.
- Provide holistic, relationship-based, and person-centered care.
- Conduct a full, face-to-face examination if the patient can meet in person.
- Encourage self-management and direct the patient to available resources.
- Manage specific symptoms and comorbidities.
- Share the uncertainties of prognosis.
- Provide hope while helping set realistic recovery goals.
- Consider referrals to others (e.g., advanced clinical practitioner, community physiotherapist) or social support services, as appropriate.
- Monitor progress.
- Assess the patient's overall mental health and manage any symptoms as needed. If there is worsening anxiety or depression or thoughts of self-harm, take urgent action and then refer to a mental health specialist.
- Provide sickness certification.
- Support self-advocacy (e.g., with employer when returning to work).
- Enter the correct code (U09.9 post-COVID-19 condition, unspecified)¹⁰² for Long COVID on the patient's electronic medical record. However, also include the ICD-10 diagnosis codes for comorbid conditions for which criteria are met.

It is important to note that access to SUD services may be limited by a patient's geographic location, lack of health insurance or underinsurance, and availability. Practitioners should discuss an array of treatment options with their patients, including financial costs and support, telehealth to increase access, and culturally appropriate treatment approaches.

Additional Resources for Patients and Providers

The August 2022 HHS report, [Services and Supports for Longer-Term Impacts of COVID-19](#), provides a comprehensive listing of current federal services and supports for those experiencing Long COVID. [Appendix C](#) identifies resources that practitioners can provide to their patients. [Appendix D](#) provides resources that practitioners can consult to learn more about Long COVID, associated treatment approaches, and stay current on advances in the field.

The federal government has established a central repository of information about Long COVID on the [COVID.gov](#) website, which includes [terms and definitions](#), a [White House Fact Sheet](#), links to [services and supports](#) for people experiencing Long COVID, and information about research, including the [National Research Action Plan on Long COVID](#).

Appendix A. Cognitive Symptom Assessment Recommendations

#	Statement
1	<p>In addition to the standard screening for the somatic symptoms of Long COVID, such as pulmonary symptoms, autonomic dysfunction,¹⁰³ and cardiovascular symptoms (vital signs and orthostatic blood pressure), screen patients for signs of cognitive symptoms using validated tools and instruments, such as the PROMIS® measures, or a self-report screener such as the Modified COVID-19 Yorkshire Rehabilitation Screening (Modified C19-YRS). Digital applications are also available online.</p>
2	<p>Evaluate patients for factors that may exacerbate cognitive symptoms, including:</p> <ul style="list-style-type: none"> ● Sleep impairment ● Mood and anxiety disorders, including anxiety, depression, OCD, and PTSD ● Fatigue ● Endocrine abnormalities ● Autoimmune disorders ● Adequate nutritional intake
3	<p>Conduct a thorough neurological examination to identify focal neurological deficits. Consider neuroimaging, such as magnetic resonance imaging (MRI) for localized symptoms or electroencephalogram (EEG) if episodic symptoms, for patients with new or worsening cognitive symptoms.</p>
4	<p>Consider a laboratory workup based on patient symptoms to screen for reversible and treatable factors contributing to cognitive symptoms. Lab testing should be focused and directed by symptoms. Tests might include any of the following:</p> <ul style="list-style-type: none"> ● Complete blood count ● Vitamin B12 ● Thiamine ● Folate ● Homocysteine ● 1,25-dihydroxy vitamin D ● Magnesium ● Fasting comprehensive metabolic panel¹⁰⁴ ● C-Reactive Protein¹⁰⁴ ● Complete thyroid function test panel ● Rheumatological workup ● Rapid plasma reagin (RPR) ● Ferritin¹⁰⁵ <p>Consider other laboratory tests based on the results of these tests or if there is specific concern for comorbid conditions. Note: There are no specific laboratory abnormalities that are specific for Long COVID, and the absence of abnormal laboratory tests does not preclude the diagnosis of Long COVID.</p>

	Statement
5	<p>Conduct a full patient history with review of preexisting conditions, substance use, and comprehensive medication history, and supplement review for those that may contribute to cognitive symptoms.</p> <p>Patients with Long COVID may be taking antihistamine, anticholinergic, and anxiolytic medications that can contribute to cognitive symptoms.</p>
5a	<p>Collect collateral patient history, including preexisting function and conditions, from care team (primary care), patient family, or close contacts, as available.</p>
6	<p>Assess impact of cognitive symptoms using standardized patient-reported assessments. Include activities of daily living, school, work, and avocational (i.e., hobbies). Assess the patient's overall quality of life using tools like the Post-COVID-19 Functional Status Scale (PCFS) or the EuroQol-5D (EQ-5D) to consider the impact of Long COVID on the whole patient.</p>
7	<p>Assess patient needs and develop an appropriate care and support plan that may include referrals to other mental health providers, specialists, or family support providers, as needed.</p>
8	<p>Create a plan for monitoring patient progress. Schedule a time to follow up with the patient to monitor their ongoing health status.</p>
<p>This appendix is adapted from Fine, J. S., Ambrose, A. F., Didehbani, N., Fleming, T. K., Glashan, L., Longo, M., Merlin, A., Ng, R., Nora, G. J., Roblin, S., Silver, J. K., Terzic, C. M., Verduzco-Gutierrez, M., & Sampsel, S. (2022). Multi-disciplinary collaborative consensus guidance statement on the assessment and treatment of cognitive symptoms in patients with post-acute sequelae of SARS-CoV-2 infection (PASC). <i>The Journal of Injury, Function, and Rehabilitation</i>, 14(1), 96-111. https://onlinelibrary.wiley.com/doi/epdf/10.1002/pmjr.12745</p>	

Appendix B. Assessment Tools and Therapeutic Intervention Strategies by Functional Domain

Assessment Tools and Therapeutic Strategies for Cognitive Deficits			
Domain	Patient Concerns	Assessment Tools	Therapeutic Interventions & Coping Strategies
Attention	<ul style="list-style-type: none"> • Cognitive impairment or “brain fog” • Difficulty concentrating on tasks • Losing train of thought • Misplacing objects • Easily distracted 	<ul style="list-style-type: none"> • Digit span test • The Mini-Mental State Exam (MMSE) • Cogstate Digital Cognitive Assessment • MoCA Cognitive Assessment or The MoCA Test 	Attention process training for verbal and nonverbal tasks, metacognitive strategies, timed structured activities, and minimizing distractions.
Processing speed	<ul style="list-style-type: none"> • Slowed thought processes • Difficulty following conversations 	<ul style="list-style-type: none"> • Continuous Performance Test (CPT) • Oral Trail Making Test Parts A & B 	Recording talks, lectures, etc. to review at own pace; practicing skills repeatedly towards automaticity; breaking projects into components to complete over time.
Motor function and speed	<ul style="list-style-type: none"> • Slowed motor function 	<ul style="list-style-type: none"> • Grooved Pegboard Test 	Use of dictation devices (speech to text).
Language	<ul style="list-style-type: none"> • Word-finding difficulty during conversation • Grasping for words • Verbal fluency • Difficulty with comprehension of multiple step instructions 	<ul style="list-style-type: none"> • Boston Naming Test • Neuropsychological Assessment Battery® (NAB®) • Multilingual Aphasia Examination (MAE) 	<p>Semantic feature analysis, word finding strategies, use of word associations, convergent/divergent naming tasks, anagrams.</p> <p>Structured tasks with SLP to address various domains, such as comprehension, recall, word finding, thought organization, identification of strategies for all domains that are impaired based on assessments.</p>

Assessment Tools and Therapeutic Strategies for Cognitive Deficits			
Domain	Patient Concerns	Assessment Tools	Therapeutic Interventions & Coping Strategies
Mental fatigue	<ul style="list-style-type: none"> Mental exhaustion or brain fog due to sensory stimulation or after completing cognitive tests for extended periods without breaks 	<ul style="list-style-type: none"> Mental Fatigue Scale (MFS) 	Mindfulness-based stress reduction (MBSR), ¹⁰⁶ a method of using meditation and yoga to cultivate awareness and reduce stress.
Executive function	<ul style="list-style-type: none"> Trouble planning, organizing, and sequencing (e.g., cooking, finances) Difficulty multi-tasking 	<ul style="list-style-type: none"> Oral Trail Making Test Part B Executive Function Performance Test Wisconsin Card Sorting Inspired Task (WCST) Functional Assessment of Verbal Reasoning and Executive Strategies (FAVRES) 	Training in metacognitive strategies to promote self-awareness and self-monitoring. Examples of metacognitive strategies include goal-plan-do-review, self-talk, goal management training (stop-think-plan), predict-perform technique.
Assessment Tools and Therapeutic Strategies in Mental Health			
Condition	Patient Concerns	Assessment Tools	Therapeutic Interventions
Anxiety	<ul style="list-style-type: none"> Excessive fear Feeling tense, nervous, or unable to relax Persistent worry accompanied by physical symptoms, such as: <ul style="list-style-type: none"> Edginess or restlessness Tiring easily; more fatigued than usual 	<ul style="list-style-type: none"> Beck Anxiety Inventory (BAI) Generalized Anxiety Disorder Screener (GAD-7) 	<ul style="list-style-type: none"> Trauma-informed therapy¹⁰⁷ Cognitive restructuring¹⁰⁸ (materials can be found here and here) Exposure therapy¹⁰⁹ Telehealth therapy options¹¹⁰ Medications approved by the Food and Drug Administration (FDA), as needed¹¹¹

Assessment Tools and Therapeutic Strategies in Mental Health			
Condition	Patient Concerns	Assessment Tools	Therapeutic Interventions
Depression	<ul style="list-style-type: none"> ● Persistently depressed mood nearly every day for at least two weeks ● Loss of interest or pleasure in all or most activities ● Feelings of worthlessness or excessive or inappropriate guilt nearly every day ● Diminished ability to think or concentrate, or indecisiveness, nearly every day ● Symptoms cause significant distress or impairment in daily life 	<ul style="list-style-type: none"> ● Beck Depression Inventory (BDI) ● Patient Health Questionnaire (PHQ-9) 	<ul style="list-style-type: none"> ● Trauma-informed therapy¹⁰⁷ ● Telehealth therapy options¹¹² ● FDA-approved medications, as needed¹¹³
Posttraumatic Stress Disorder (PTSD)	<ul style="list-style-type: none"> ● Recurrent, involuntary, and intrusive distressing memories ● Flashbacks or distressing dreams ● Hypervigilance ● Unable to sleep due to memories of traumatic experience 	<ul style="list-style-type: none"> ● CAPS-5 ● PTSD Checklist for DSM-5 (PCL-5) ● Using the PTSD Checklist for DSM-5 (PCL-5) ● PTSD Symptom Scale (PSS) 	<ul style="list-style-type: none"> ● Trauma-informed therapy¹⁰⁷ ● FDA-approved medications¹¹⁴ ● Eye movement desensitization and reprocessing¹⁰⁷ ● Cognitive behavioral therapy¹⁰⁷ ● Prolonged exposure¹¹⁵ ● Cognitive processing therapy¹¹⁵

Assessment Tools and Therapeutic Strategies in Mental Health			
Condition	Patient Concerns	Assessment Tools	Therapeutic Interventions
Obsessive-Compulsive Disorder (OCD)	<ul style="list-style-type: none"> • Recurrent, persistent intrusive thoughts, urges, or images • Repeating actions or words to prevent or reduce anxiety or distress (e.g., ordering, checking, handwashing) • Difficulty tolerating uncertainty • Needing things orderly and symmetrical 	<ul style="list-style-type: none"> • Yale-Brown Obsessive Compulsive Scale (Y-BOCS) 	<ul style="list-style-type: none"> • Trauma-informed therapies (cognitive behavioral therapy) combined with FDA-approved medication⁹⁷
Substance Use Disorder (SUD)	<ul style="list-style-type: none"> • Consuming substances in larger amounts and for a longer time than intended • Experiencing craving, a pressing desire to use the substance • Impairment in ability to fulfill major obligations at work, school, or home • Increasing tolerance to substance • Withdrawal symptoms when substance use decreases 	<ul style="list-style-type: none"> • The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) • Personal Drug Use Questionnaire (DAST-20) • Fagerström Test for Nicotine Dependence • Michigan Alcoholism Screening Test (MAST) • Screening, Brief Intervention, and Referral to Treatment for Substance Use (SBIRT) 	<ul style="list-style-type: none"> • Contingency management¹¹⁶ • Motivational interviewing¹¹⁷ • Medication-assisted treatments^{118, 119} • Peer recovery support services¹²⁰

Assessment Tools and Therapeutic Strategies for Other Health Symptoms			
Condition	Patient Concerns	Assessment Tools	Therapeutic Interventions
Psychological Stress	<ul style="list-style-type: none"> • Crying spells or bursts of anger • Difficulty eating • Losing interest in daily activities • Increasing physical distress symptoms, such as headaches or stomach pain • Fatigue • Feeling guilty, helpless, or hopeless • Avoiding family and friends • Difficulty coping with demands • Chronic stress may lead to depression 	<ul style="list-style-type: none"> • Perceived Stress Scale (PSS) • Kessler Psychological Distress Scale (K10) 	<ul style="list-style-type: none"> • Meditation¹²¹ • Mindfulness-based stress reduction¹²² • Yoga¹²³ • Stress-management techniques (guided imagery, progressive muscle relaxation, deep breathing)¹²⁴
Fatigue and Sleep Disorders	<ul style="list-style-type: none"> • Excessive daytime sleepiness • Falling asleep at inappropriate times • Morning headaches • Loud snoring • Drowsy driving • Sleep apnea • Inability to fall asleep, “insomnia” • Inability to maintain sleep • Restless leg syndrome 	<ul style="list-style-type: none"> • The Epworth Sleepiness Scale (ESS) and The Epworth Sleepiness Scale for Children and Adolescents (ESS-CHAD) • Pittsburgh Sleep Quality Index • PSQI Scoring 	<ul style="list-style-type: none"> • Diet and lifestyle¹²⁵ • Pharmacology¹²⁶ • Chronotherapy and light therapy¹²⁶ • Surgery¹²⁶

Note: Assessments and interventions in Appendix B have not been validated or studied with all demographic or racial/ethnic populations and some may be less effective for a variety of reasons, including language barriers or a failure to account for variations in dialect or stereotyping.

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Appendix C. Recommended Resources and Supports for Primary Care Providers to Give Patients Experiencing Long COVID

Type of Resource	Recommended Program/Resources
Advocacy and Peer Support	<p>Patients with Long COVID can feel supported by others who have had similar experiences and empowered through advocacy. Resources include:</p> <p>The COVID Advocacy Exchange</p> <p>Survivor Corps</p> <p>The Long COVID Alliance</p> <p>The COVID-19 Longhailer Advocacy Project</p> <p>Body Politic</p> <p>National Patient Advocate Foundation COVID Care Resource Center</p> <p>SAMHSA's Behavioral Health Treatment Locator</p> <p>Support group for families with Long COVID</p> <p>Support network for kids with Long COVID</p>
Suicide and Crisis Lifeline	<p>Dial 988 to call or text the national 988 Suicide & Crisis Lifeline. The Lifeline provides 24/7, free and confidential support for people in distress, prevention and crisis resources for individuals or their loved ones, and best practices for professionals in the United States.</p>
Support Groups	<p>Support groups, especially virtual ones, for example Survivor Corps, may be beneficial for people experiencing Long COVID, as well as those who lost a loved one to COVID-19. Many virtual support groups are created and maintained by people with Long COVID. The Body Politic has a support group via Slack for Long COVID patients and caregivers.</p>
Indian Health Service (IHS), Division of Behavioral Health	<p>The Indian Health Service Division of Behavioral Health addresses behavioral health issues, such as mental health conditions, mental illness, mental disorders, substance use disorders, suicide, and violence, through integrated behavioral health and primary care treatment.</p>
Occupational and Physical Therapy	<p>Occupational and physical therapy may be necessary for patients to recover from chronic fatigue, regain mental acuity and function as independently as possible. Telehealth options may be available in some areas. This directory for occupational therapy and this directory through the American Physical Therapy Association can help identify local occupational and physical therapists.</p>
Resources for People with Disabilities	<p>The CDC offers COVID-19 resources for people with disabilities with information on when to use the resources. The HHS Guidance on "Long COVID" as a Disability Under the ADA, Section 504, and Section 1557 may be beneficial for individuals where Long COVID substantially impacts their life, as well as the Social Security Administration's application for disability benefits.</p>

Appendix D. Recommended Resources for Primary Care Providers to Learn About Long COVID

Type of Resource	Recommended Program/Resources
Clinician Training Opportunities and Resources	<p>The American Academy of Family Physicians’ online education program covers managing short- and long-term effects of Long COVID on patients and communities.</p> <p>Clinician Outreach and Communication Activity (COCA) Calls/Webinars run by the CDC present key emergency preparedness and response topics by subject matter experts.</p> <p>CDC Post-COVID Conditions: Information for Healthcare Providers has information on Long COVID and additional resources for providers.</p> <p>CDC/IDSA COVID-19 Clinician Calls are webinars that provide timely information for clinicians on COVID-19.</p> <p>The Long COVID and Fatigue Illness Recovery Program webinar rapidly disseminates information about Long COVID findings and emerging best practices.</p> <p>Morbidity and Mortality Weekly Report (MMWR) COVID-19 Reports highlight the most recent COVID-19 research and information.</p> <p>A Systematic Review and Meta-analyses on Long COVID in Children and Adolescents provides additional background.</p>
Federal Resources	<p>This Centralized Website on Long COVID provides a variety of resources for clinicians and patients. It contains the most updated briefs, research, and information on Long COVID from the federal government.</p> <p>The National Research Action Plan on Long COVID outlines a comprehensive, equitable research strategy that guides research that improves patient care and outcomes, centers health equity, engages partners, and expands existing research on Long COVID.</p> <p>The Services and Supports for Longer-Term Impacts of COVID-19 report is a resource guide for clinicians to help individuals, their families, and caregivers find needed supports, services, and reasonable accommodations to get health care and treatment, go to work or school, and live in the community.</p> <p>The CDC webpage “Post-COVID Conditions: Information for Healthcare Providers” provides an overview for healthcare providers and information on current science.</p>
Trauma-Informed Approach	<p>The National Child Traumatic Stress Network (NCTSN) was created to increase access to and the standard for services for children and families who experience or witness traumatic events. The NCTSN has specific information on trauma-informed screenings, treatments, and resources for clinicians related to the pandemic.</p> <p>The Trauma-Informed Care Implementation Resource Center has information and resources on trauma-informed care, as well as scenarios of it in action.</p>
Professional Associations	<p>American Academy of Physician Medicine and Rehabilitation (AAPM&R) has a Multidisciplinary Quality Improvement Initiative to support the national plan to address Long COVID.</p>

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